DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	SHOWELL POND	Lake Area (ha):	7.49
Town:	SANDOWN	Maximum depth (m):	7.2
County:	Rockingham	Mean depth (m):	3.1
River Basin:	Coastal	Volume (m^3):	235500
Latitude:	42°54'28" N	Relative depth:	2.3
Longitude:	71°10'35" W	Shore configuration:	1.03
Elevation (ft):	229	Areal water load (m/yr):	3.92
Shore length (m):	1000	Flushing rate (yr^{-1}):	1.20
Watershed area (ha):	62.2	P retention coeff.:	0.70
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:		22 January 1998	14 July 1997
DOM. PHYTOPLANKTON (% TOTAL)	#1	LYNGBYA 40%	ANABAENA 55%
	#2	ASTERIONELLA 30%	TABELLARIA 18%
	#3	DINOBRYON 12%	CERATIUM 15%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			32.79
DOM. ZOOPLANKTON (% TOTAL)	#1	NAUPLIUS LARVA 73%	KELLICOTTIA 33%
	#2	DAPHNIA 7%	KERATELLA 29%
	#3	KELLICOTTIA 7%	NAUPLIUS LARVA 12%
ROTIFERS/LITER		105	321
MICROCRUSTACEA/LITER		653	91
ZOOPLANKTON ABUNDANCE (#/L)		762	455
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			1.5
BOTTOM DISSOLVED OXYGEN (mg/L)		4.3	0.1
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	2.5
Hypolimnion volume (m^3) :	16250
Anoxic volume (m^3) :	59000

CHEMICAL:

Lake: SHOWELL POND
Town: SANDOWN

	22 January 1998		14 July 1997		
DEPTH (m)	2.0	5.0	1.0	3.0	6.0
pH (units)	6.9	6.7	7.5	6.6	6.5
A.N.C. (Alkalinity)	14.6	14.9	14.5	14.7	22.5
NITRATE NITROGEN	0.05	< 0.05	< 0.05		0.09
TOTAL KJELDAHL NITROGEN	1.20	1.20	0.60	1.00	1.50
TOTAL PHOSPHORUS	0.042	0.029	0.030	0.097	0.217
CONDUCTIVITY (μmhos/cm)	80.6	85.1	74.2	72.8	83.2
APPARENT COLOR (cpu)	60	60	55	65	130
MAGNESIUM			1.20		
CALCIUM			5.7		
SODIUM			6.9		
POTASSIUM			1.70		
CHLORIDE	11	12	12		11
SULFATE	3	3	3		2
TN : TP	30	41	20		7
CALCITE SATURATION INDEX			1.9		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1997

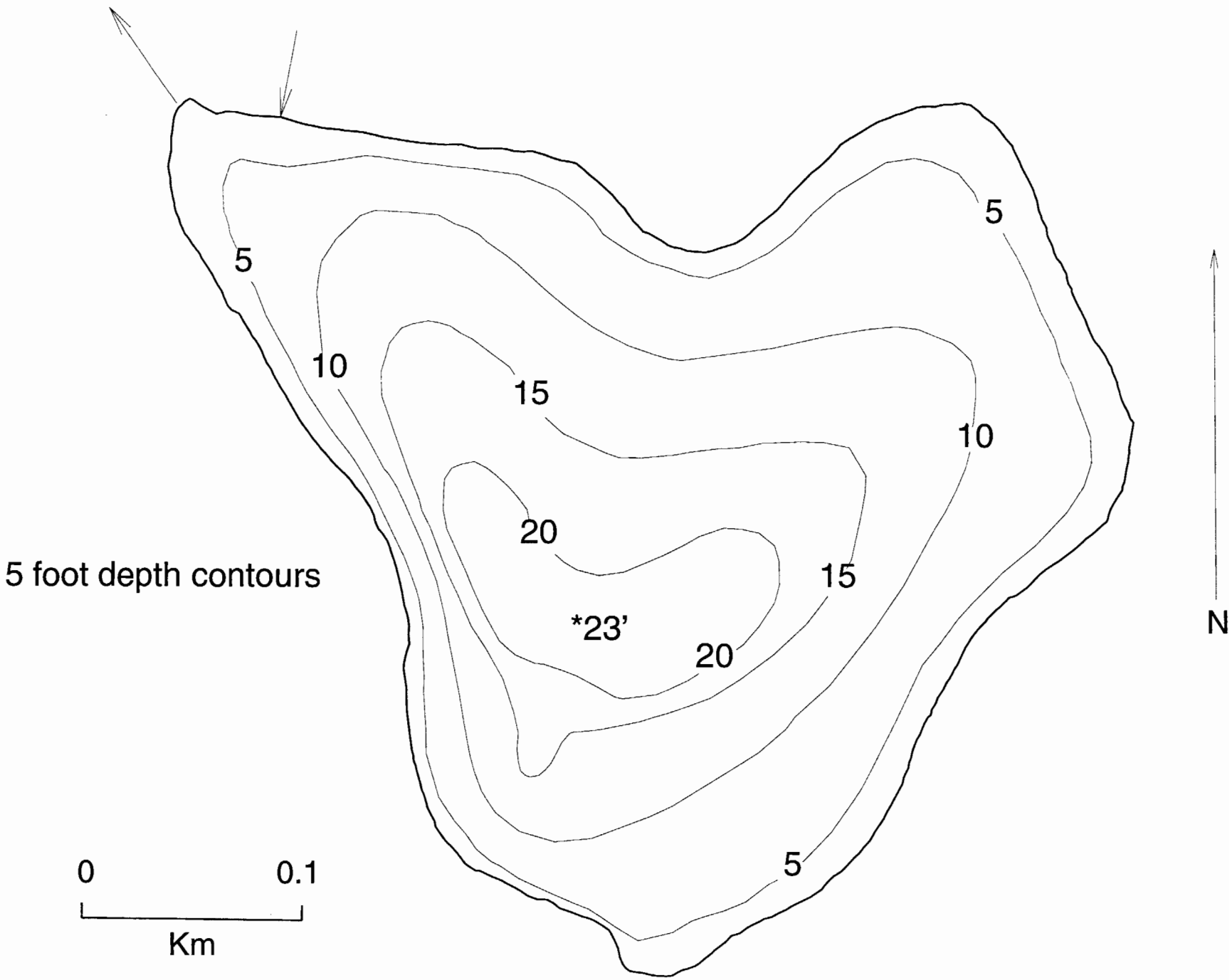
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	4	3	6	17	Eutro.

COMMENTS:

1. Showell Pond was previously surveyed and classified in 1983. It was also classified eutrophic in the 1983 survey.
2. This is a dark tea-colored circum - neutral eutrophic pond. No dissolved oxygen was present below 3 meters (the entire hypolimnion and much of the metalimnion was anoxic). The elevated phosphorus levels in the meta and hypolimnions indicate internal release of phosphorus from bottom sediments under the anoxic conditions.
3. No public access.
4. Blue-green algae dominated the phytoplankton in both the winter and summer. During the summer, *Anabaena* was in bloom amounts.

Showell Pond

Sandown



FIELD DATA SHEET

LAKE: SHOWELL POND TOWN: SANDOWN
DATE: 07/14/97 WEATHER: SUNNY & BREEZY

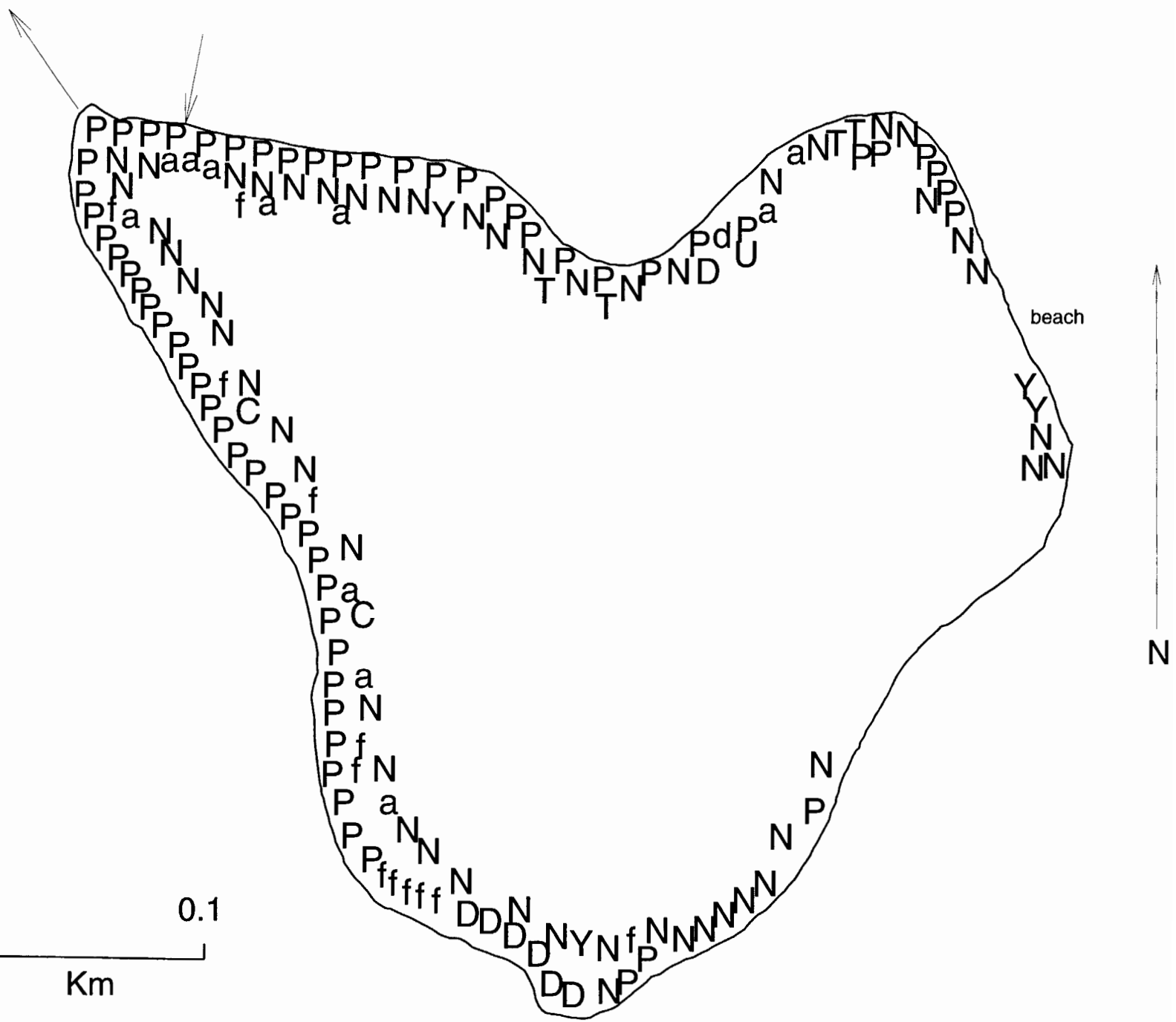
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	27.0	9.3	116 %
	1.0	26.8	9.2	113 %
	2.0	23.6	11.0	128 %
	3.0	17.1	0.0	0 %
	4.0	12.6	0.0	0 %
	5.0	10.0	0.0	0 %
	6.0	9.1	0.1	1 %
	7.0	8.7	0.1	1 %

SECCHI DISK (m): 1.5 COMMENTS:
BOTTOM DEPTH (m): 7.2
TIME: 1130

*Dissolved oxygen values are in mg/L

Showell Pond

Sandown



AQUATIC PLANT SURVEY

LAKE: SHOWELL POND TOWN: SANDOWN DATE: 07/14/97

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Common
Y	Nuphar	Yellow water lily	Scattered
N	Nymphaea	White water lily	Common
T	Typha	Cattail	Sparse
D	Decodon verticillatus	Swamp loosestrife	Scat/Common
a	Peltandra virginica	Arrow arum	Scat/Common
d	Dulichium arundinaceum	Three-way sedge	Sparse
U	Utricularia	Bladderwort	Sparse
f	Polypodiaceae	Fern family	Scat/Common
C	Cyperaceae	Non-flowering sedge	Sparse

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

1. Plants were abundant along all but the southeast shoreline where they were essentially non-existent, giving an overall rating of common.
2. Submerged plants were likely more abundant than indicated, but were not observed due to the highly colored waters.